

# Utilising an evidence-based approach to manage a complex, non-healing diabetic foot ulcer

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## INTRODUCTION

Diabetic foot ulcers (DFU) are serious and challenging wounds associated with high risk of infection, lower-limb amputation and increased mortality<sup>1</sup>. Neuroischaemic (NI) DFU, involving both peripheral neuropathy and peripheral artery disease (PAD), are now estimated to account for over 50% of total DFU<sup>2</sup>. They are associated with the most severe adverse outcomes, including non-healing, higher probability of ulcer recurrence, greater risk of amputations, and potentially higher mortality<sup>3</sup>. One reason offered for the poor outcomes with NI-DFU is the presence of excessive levels of matrix metalloproteinases (MMPs) in the wound environment, which contribute to the prolonged inflammation considered a main factor in delayed wound healing<sup>4,5</sup>.

Previously, local treatment options supported by high-quality clinical evidence for NI-DFU have been limited<sup>3</sup>. The UrgoStart treatment range containing a unique compound, TLC-NOSF, was developed to inhibit excessive levels of MMPs and promote angiogenesis to improve wound healing outcomes. The effectiveness of TLC-NOSF was demonstrated in a double-blind randomised controlled trial where significantly improved wound closure of NI-DFU was achieved compared to non-interactive dressings when used alongside standard care<sup>1</sup>. The positive outcomes and robust methodology of this trial, alongside additional high-quality evidence, was instrumental to the UrgoStart treatment range being recommended in NICE guidance to treat DFU and venous leg ulcers in the NHS<sup>6</sup>.

Positive outcomes for UrgoStart dressings have also been demonstrated in real-world clinical environments<sup>7</sup>, including in the following case study where UrgoStart Plus was used to promote healing of a complex NI-DFU.

## METHOD

The patient was a 57-year old gentleman under the care of vascular and specialist diabetic podiatry teams for over two years with a history of a left Below-Knee Amputation (BKA) due to Diabetes and PAD, with surgery for revascularisation previously performed. He had, however, gone on to require a ray amputation of two toes on the right foot, with extensive debridement to the plantar arch (Fig. 1). The wound had initially made good progress with Topical Negative Pressure therapy and non-adherent dressings, but had become static and been present over a year. The non-healing was negatively impacting on the patient's quality of life and psychological well-being as he was due to be married and was desperate to be able to wear his prosthetic limb so he could walk down the aisle on his wedding day. The Artificial Limb Centre had stated he was not to mobilise until the wound had healed due to his high-risk status from the previous BKA.



Fig. 1 - Post-Ray Amputation and extensive surgical debridement

The podiatry and vascular teams caring for Mr B were determined to enable him to wear his prosthetic limb for his wedding day, leading to them seeking an alternative treatment to encourage progression of this static complex wound. They were aware of recent NICE guidance regarding use of UrgoStart dressings for healing DFU, and decided to use UrgoStart Plus Pad to inhibit any excessive protease activity and to promote angiogenesis and formation of healthy granulation tissue for healing.

On commencement of UrgoStart Plus Pad, the wound measured 4 x 3cm and 0.5cm deep, with 40% sloughy tissue to the wound bed and low exudate levels (Fig. 2). UrgoStart Plus Pad was applied to the wound to remove the slough and inhibit excess MMPs in the wound. Weekly assessments were performed in vascular/podiatry clinic, with an interim dressing change at home.

## RESULTS

After 5 weeks' treatment, the wound was fully healed. Mr B was able to mobilise with his prosthetic limb and he walked down the aisle at his wedding as planned, thrilled with the treatment he had received and the healing of his wound.



Fig. 2 - Pre-UrgoStart Plus Pad, wound dimensions static for 4 weeks

## DISCUSSION

Use of a NICE-recommended, evidence-based approach in the form of TLC-NOSF treatment ensured this case had a particularly successful outcome with a complex wound in multiple ways. The combined action of the polyabsorbent fibres contained within UrgoStart Plus promoted efficient de-sloughing and maintenance of a clean wound bed while the TLC-NOSF inhibited excess MMPs to achieve rapid healing, a factor which the research highlights as a common cause of delayed healing in DFUs. The positive impact on the patient's emotional and psychological well-being at being able to enjoy his wedding day was immeasurable. It highlights the supportive relationship developed between the clinicians and patient, and recognition of a need for timely healing with an evidence-based treatment to promote positive wound progression while also being safe and easy to use. The patient and clinicians developed confidence in the product due to the rapid and effective outcome achieved.

## CONCLUSION

This case study highlighted that UrgoStart Plus Pad was an effective treatment choice to heal a chronic NI-DFU in routine clinical practice, and should be considered as a routine treatment option.



Fig. 3 - Post-UrgoStart Plus Pad

## REFERENCES

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